

FORE
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Message from the Director

KATHLEEN M. CODY



It is thankfully becoming common knowledge that a calcium-rich diet is a key to preventing and reversing the effects of osteoporosis. Yet what is less known but, perhaps, equally important, is the beneficial effect of regular exercise on bone health.

A study reported on at the American Society for Bone and Mineral Research (ASBMR) measured the bone density of athletes, showing that BMD is higher across all sports, particularly weightlifting, gymnastics, and soccer. These athletes' legs, hips, spines, and arms demonstrated bone density that was on average 13% higher than non-athletes. (For more information, see the link on our website: www.fore.org)

Does this mean we all have to become bodybuilders and Olympians? Fortunately, no! But this data offers compelling evidence that both aerobic and anaerobic exercise can make a difference in increasing bone health. And, in conjunction with that calcium-rich diet, we are very likely to live longer and more fully.

Heritage Club Grows

MICHAEL WEINTRAUB

On the 25th of February the FORE "Heritage Club" met to hear important information about one of the most serious challenges to personal financial security... identity theft. In a fascinating presentation we learned to secure our personal financial information and avoid becoming a victim. You might think that this is somewhat far afield from finding the cure for osteoporosis but quite the contrary is true. When we invite our planned giving donors to a fun and educational evening, we grow a very important income source.

Planned giving is so important because it is: (a) a "painless" way to make a big gift and (b) often very tax-advantageous. If you have any questions about our next event (planned for November) or the tax-consequences of charitable giving, please contact my friend Terry Fries at the FORE office at (510) 832-2663 x 33.

FORE Would Like to Thank

FORE would like to thank *Procter & Gamble Pharmaceuticals* and *Kyphon, Inc.* whose educational support made this newsletter possible. www.pg.com, www.kyphon.com. These companies exercise no control over content.

Editor: Kristina Goodnight, Contributors: Kathleen Cody, Kristen Olden, OsteoLife, Christine M. Snow, PhD and Michael Weintraub. *Design & Layout by MANMADE.* www.manmade.com

This newsletter was produced using recycled paper made with post-consumer waste and bleached without the use of chlorine compounds. The use of this paper stock has saved:

- 7.....Trees
- 1,519.....Gallons of water
- 14.....Pounds of hazardous effluent (BOD's, TSS's, COD's, AOX's)
- 332.....Pounds of solid waste
- 491.....Miles traveled in the average American car
- 3.....Million BTU's of energy
- 561.....Pounds of greenhouse gases

Community Exercise Yields Significant Improvement in Fracture Patients

BY CYNTHIA GIBSON-HORN, PT, MARIANNE GIBSON, PT AND BARBARA HEIL, PT

Post-fracture rehabilitation is often insufficient in returning patients to normal function. A recently completed FORE study confirmed the hypothesis that community-based exercise led by a physical therapist is effective in making significant improvement in physical function in patients who have suffered a low trauma, lower extremity fracture.

FORE and the OsteoLife team of three physical therapists conducted the study to determine whether extending rehabilitation to a longer term, community-based program would produce positive changes in strength, balance and endurance. They were interested in how this program would impact fall and fracture risk, actual number of falls, confidence and quality of life.

Thirty-eight ambulatory English and/or Chinese-speaking subjects between the ages of 49 and 91 were recruited. Participants attended twice weekly, hourlong exercise sessions led by a physical therapist at community senior centers for six or twelve months. Sessions were comprised of strength training with free weights, as well as flexibility and balance exercises. Hand, ankle and vest weights were gradually increased and higher level balance, lunging, and stepping activities progressed accordingly. All subjects also took 1000 mg of Calcium and 800 IU Vitamin D daily.

Of the 34 subjects who completed the study, all demonstrated significant improvement in strength, gait velocity and balance. The number of individuals using assistive devices was also greatly reduced. By the end of the program, fall risk had decreased by 31%, the number of fallers by 44% and the number of falls by 30%. The severity of the falls reported during the program year was markedly reduced as compared with pre-study information.

ABOUT THE AUTHORS

The authors are physical therapists with OsteoLife, a company that provides individual therapy in addition to community programming for those with osteoporosis and/or balance problems.

REFERENCES

Henderson Sa, Finlay Oe, Murphy N, Boreham C, Mollan Rab, Gillmore Dh, Et Al (1992) Benefits Of An Exercise Class For Elderly Women Following Hip Surgery. *Ulster Med J* 61:144-50.

In addition to decreased falls and fall risk, the use of assistive devices decreased as well.

In addition, participants showed significant improvement in psychological well-being indicating that improvement in physical performance preceded increases in confidence and quality of life scores, culminating in reduced fall risk. By the end of the program year, fall risk had decreased by 31% and the number of falls by 30%. The number of subjects who reported falls decreased by 44% and the severity of those falls reported during the program year was markedly reduced.

All subjects had received some form of acute physical rehabilitation prior to entering the study, but deficits in function and confidence were still apparent on initial evaluation. The results of this study indicate that six to nine months are required to regain sufficient function and confidence levels to affect improvement in total quality of life. Sustaining rehabilitation efforts for this length of time on an individual basis, is cost prohibitive. Group treatment, however, can effectively lower the cost of extending rehabilitation and allow for the time needed to produce the desired results. Group dynamics furthermore can provide the motivation to continue exercising.

Community-based group rehabilitation is a viable means of treating patients with lingering deficits following acute fracture therapy. This program format serves as a model of treatment delivery. As medical costs continue to skyrocket, such strategies will be imperative in effectively utilizing healthcare dollars and resources.



Ask the Doctor

What exercises should individuals with osteoporosis and osteopenia avoid?

CHRISTINE M. SNOW, PHD, FACSM OREGON STATE UNIVERSITY, DIRECTOR, BONE RESEARCH LABORATORY (BRL) - EXCLUSIVE FOR FOREFRONT

I would be reluctant ever to tell a patient to avoid doing diverse types of exercises, as such avoidance causes bone and muscle weakness, thereby increasing fracture risk. There are no existing clinical trials to measure the effects of particular exercises on osteoporotic or osteopenic patients as it is, of course, not ethical to actually test what causes fracture. Yet much evidence has proven that fractures are largely caused by falls. Low bone density is a significant risk factor but, if an osteoporotic or osteopenic individual does not fall, he or she is not likely to fracture. Exercise is paramount in preventing falls as it builds bone mass, strengthens

muscles and increases balance.

When looking at exercise precautions, however, recommendations are based largely on the amount of force the movement requires. In this respect, there is a great deal of overlap between osteoporosis and osteopenia. The spine and hip are the primary focal points when considering fracture risk.

With the spine, I would follow the same protocol as with a back injury in that a patient should avoid activities that will strain his/her back such as bending over to lift groceries from the ground. I would like to re-emphasize that bending exercises should not be avoided but rather the individual should

remain conscious of using the legs and keeping the trunk erect. When doing squats, for example, the knees should be bent deeply, and the body should hinge at the hip, not at the waist. The individual must develop the muscle memory to bend and lift with the back straight so that this motion becomes an automatic bodily response which will in turn build strength. An individual with a weakened spinal column should also be cautious with twisting motions. Focusing on low-impact, strength-building exercises for the back, such as rowing, are greatly beneficial in increasing the muscular strength necessary to prevent falls.

As far as protecting the hip, very few movements will put these bones at risk for fracture even when force is delivered quickly as with jumping motions. I have worked with osteoporotic patients in a jumping program and the impact load increased their bone strength to the degree that their osteoporosis began to reverse itself.

While osteoporotic and osteopenic patients must remain cognizant of performing exercises correctly and in some cases avoiding certain movements, I cannot emphasize enough that exercise is the key to fall prevention, which is, in turn, the key to preserving longevity and quality of life.

Spring & Summer 2004 Calendar

MAY

Osteoporosis Awareness Day with the Oakland Athletics

Tuesday, May 4th at 7:05 pm

New York Yankees vs. Oakland Athletics

FORE will be at the Network Associates Coliseum teaching baseball fans about osteoporosis through educational literature, scoreboard messages and unique prizes. Prizes available for raffle include an autographed Jason Giambi jersey, and autographed Eric Chavez game glove and an game jersey autographed by Tim Hudson, Mark Mulder and Barry Zito. For more information, call Kristen Olden at (510) 832-2663 x 14.

Bone Mineral Density (BMD) Testing at BayArea Safeway Stores.

BMD Testing at various Safeway locations throughout the month of May. This non-invasive, pain free test takes only minutes and is extremely safe (1/50th the radiation of a chest x-ray). No appointment needed. The cost of the test is \$25. With the purchase of a BMD test, customers will receive a \$20 off Safeway grocery coupon. To find out when FORE will be at your local Safeway, call (510) 832-2663 x 38 or check our website at www.fore.org.

FORE at the Capitol Building

May 10th 10 am - 3 pm Sacramento, California

Bone Density Testing, lobbying on the legislature floor on osteoporosis health care issues and a presentation of an Osteoporosis Proclamation on the Senate floor.

Osteoporosis Health Fair II - Too Busy to Have a Break

May 17th 9 am - 3 pm Rossmoor, California

Bone Density Testing, Balance Screenings, a presentation of an Osteoporosis Proclamation from Contra Costa County, various health related activities and educational lectures.

JUNE

Bone Mineral Density (BMD) Testing at BayArea Safeway Stores.

BMD Testing at various Safeway locations throughout the month of May. This non-invasive, pain free test takes only minutes and is extremely safe (1/50th the radiation of a chest x-ray). No appointment needed. The cost of the test is \$25. With the purchase of a BMD test, customers will receive a \$20 off Safeway grocery coupon. To find out when FORE will be at your local Safeway, call (510) 832-2663 x 38 or check our website at www.fore.org.

Bone Densitometry Limited License School

June 11th - June 13th Oakland, California

A three-day course designed to educate participants about osteoporosis and bone densitometry. Upon completion, participants are eligible to apply for a limited license in bone densitometry.

JULY

Healthy Living Walk-A-Thon & Recourse Fair

July 9th 10 am - 2 pm Lake Merritt, Oakland

AUGUST

Bone Densitometry Limited License School

August 6th - August 8th Oakland, California

A three-day course designed to educate participants about osteoporosis and bone densitometry. Upon completion, participants are eligible to apply for a limited license in bone densitometry.

SEPTEMBER

Northern California Bone & Mineral Club

September - San Francisco, California

Date and Speaker TBD

OCTOBER

Northern California Bone & Mineral Club

October - Bay Area

Date and Speaker TBD